

JPRS 74117

30 August 1979

# USSR Report

ECONOMIC AFFAIRS

No. 888

**FBIS**

FOREIGN BROADCAST INFORMATION SERVICE

## NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

## PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.



30 August 1979

USSR REPORT  
ECONOMIC AFFAIRS

No. 888

CONTENTS	PAGE
Procedure for Improving Resource Utilization Described (Ye. Kazakov; PLANOVOYE KHOZYAYSTVO, Jun 79) .....	1
Counterplanning as a Management Tool (Ye. Torkanovskiy; EKONOMICHESKIYE NAUKI, May 79) .....	13
Planning Techniques Since Wartime Reviewed (Nikolay Pavlovich Lebedinskiy Interview; PRAVDA, 31 May 79).	23
Punctuality of Deliveries Related to Production Efficiency (I. Zamoyskiy; KHOZYAYSTVO I PRAVO, Jun 79) .....	28
Systems Approach to Management of Scientific-Technical Progress (V. Ivanchenko; KHOZYAYSTVO I PRAVO, Jun 79) .....	37

## PROCEDURE FOR IMPROVING RESOURCE UTILIZATION DESCRIBED

Moscow PLANOVoye KHOZYAYSTVO in Russian No 6, Jun 79 pp 87-93

[Article by Ye. Kazakov, senior science associate of the Scientific Research Economics Institute under the USSR Gosplan: "On the Question of Optimization of Balances"]

[Text] The decisions of the 25th CPSU Congress emphasized that the implementing of the course of the Communist Party to improve the material and cultural standard of life of the Soviet people is based upon the dynamic and proportional development of social production and the greatest possible improvement in its efficiency. One of the most important conditions for the latter is to ensure balanced development of all elements of the national economy. This requires the elaboration of a number of theoretical questions in the area of improving planned balance work and the creation of practical prerequisites for a balanced coordination of the material, value and general economic proportions.

In the problem of creating the prerequisites for balanced development of the national economic organism, it is essential to distinguish the aspects which presuppose balancing, namely: The balances of the material, labor and financial resources; the intercoordinated and unified reproduction processes; the interacting elements of one production process at each enterprise and in the sectors, that is, between the means of labor, the subjects of labor and live labor.

All three aspects of the problem are closely interrelated. The balancing of the proportions in the system of physical and value balances and the labor resources should correspond to the balancing of the proportions between the various production resources at each enterprise and in each sector, and also meet the demands of the balancing of proportions between the related sectors and reproduction processes. Here it is essential to bear in mind that the essence of the balancing of proportions in social reproduction consists in achieving a conformity not only between production and consumption of the resources, but also in ensuring greater efficiency in the functioning of the entire national economic organism. The given supposition also determines the choice of the criterion by which the balancing of the various parts of

the balance and the reproduction proportions is determined. A rise in the efficiency of social reproduction and the use of production resources must be considered such a criterion. The necessity of elaborating plans which meet the requirements of raising the efficiency of social production is also reflected in the tasks posed by the 25th CPSU Congress for planning: "to more fully consider social needs in the plans and provide their satisfaction with the most efficient use of the labor, material and financial resources."<sup>1</sup>

This fundamental thesis, in essence, reflects the demand of the basic economic law of the socialist method of production. The use of the given criterion in the balances means that the balances should be organized proceeding from the principle that the higher the efficient use of each resource in the system of material production, the higher the level of its balancing as established in the balances. However the realization of this requirement in planning practices encounters definite difficulties which have still not been overcome even in economic theory. In the first place, there is a definite contradiction in the very demand of increasing the efficient use of each production resource. Secondly, due to the contradictoriness of the requirements there is also no complete clarity in an understanding of the essence of the economic effect obtained by the national economy from the use of the resource being balanced, and for this reason there is no dependable generally accepted method of calculating the corresponding economic indicator.

The contradictoriness of the demands for increasing the efficient use of each resource is disclosed in analyzing the dynamics of the resource utilization indicators including: Labor intensiveness, material intensiveness and capital intensiveness. Much economic research has emphasized that the dynamics of these indicators show opposite trends. This is caused by the fact that as a rule a rise in the efficient use of some resources is achieved by the use of others. For example, better use of raw materials necessitates the use of production methods for their complete processing. This can be achieved by raising the level of the technical equipping of production, and consequently this requires additional capital investments and is accompanied by a rise in capital intensiveness, that is, by a decline in the efficient use of the fixed capital. A contradiction arises between the necessity of increasing the efficiency of the raw materials and the fixed productive capital. The resolution of this contradiction entails an economic evaluation of the contribution of the various production resources to the overall rise in the efficiency of social reproduction and to a correlation of the efficiency of the reciprocal use of the resources.

The latter represents, in essence, a determination of the effect of the interchangeability of the resources. Thus, if the use of one of them is improved

---

<sup>1</sup>"Materialy XXV S"yezda KPSS" [Materials of the 25th CPSU Congress], Moscow, Politizdat, 1976, p 171.

by employing another, this means that the property of interchangeability is manifested between them. The effect of interchangeability is expressed in the releasing or saving of that resource for which a rise in the level of its use is achieved. Such interchangeability is applied everywhere in the practical activities of enterprises and national economic sectors.

In the food sectors of industry, ever greater attention is being given to reducing losses and improving the use of agricultural raw materials on the basis of introducing new equipment and production methods, building storage facilities with optimal conditions for storing the products, and increasing the production capacity for accelerating the time of its processing. Thus, by increasing the fixed productive capital and raising the capital intensive-ness of production, a releasing of resources of agricultural raw materials is achieved. In other words, the given trend characterizes the process of replacing agricultural raw materials by fixed productive capital or the subjects of labor by the means of labor.

Everywhere in all the sectors of material production, the live labor of people is being released by introducing mechanization and automation of the production processes and more productive implements of labor. The effect of the interchangeability of live and embodied labor is manifested in the growth of social labor productivity.

From what has been said the important practical conclusion can be drawn that the economic activities of society is based upon the ubiquitous use of the effect of the interchangeability of production resources. Interchangeability occurs between live and embodied labor, the means and subjects of labor, and between various combinations of live and embodied labor. Without using the effect of interchangeability it is impossible to have further development in the process of the intensification of social reproduction and a rise in its efficiency.

Since the effect of the interchangeability of resources is manifested in the amount of the release or savings of one type of resource (B) by using another resource (Z), the economic effectiveness of interchangeability (E) can be determined from the formula:

$$E = \frac{B}{Z} .$$

If the indicators B and Z are expressed through the corresponding expenditures of live and embodied labor on the production of resources, then the E indicator will reflect the amount of the savings in the expenditures of social labor on producing resource B by employing resource Z. The greater this savings is, the higher the efficiency of social production. The interchangeability of resources is an important source for increasing the productivity of social labor and for changing the structure of material production.

However in balance work the principle of interchangeability of resources is not used with sufficient wideness. For example, at present over 54,000 single-product balances are compiled for the material resources. The compiling of comprehensive material balances which was started in recent years and which to one degree or another considers the factor of resource interchangeability basically covers the balances for fuel, all types of pipe, lumber, rubber, cable products, and paper, that is, resources with obvious interchangeability. At the same time, along with the obvious interchangeability of resources there is also the nonapparent or latent.

If obvious interchangeability is inherent to the material resources of one sort (for example, resources for roofing materials which include slate, soft roofing iron, Ruberoid and tile), the unapparent can be detected with a certain degree of generalization. A reduction in the losses of agricultural raw materials by building modern warehouses is a very widely found example of the nonapparent interchangeability between raw materials and fixed productive capital.

The shortcomings in the construction and optimization of the comprehensive material balances are brought about by the absence of an analysis of the nonapparent interchangeability of resources. For this reason, we cannot accept as successful those studies, for example, on optimizing the fuel and energy balance of the nation in which the optimization of the balance is restricted to analyzing the obvious interchangeability of fuel and energy resources and for this reason does not determine the rational demands of the national economy for various types of energy. The problem of optimizing the fuel and energy balance can be resolved under the condition that the balance incorporates an alternative for the interchangeability of products from the fuel and energy complex by other types of production resources. Thus, it is essential to examine the alternatives for the interchangeability of thermal energy and thermal insulating materials used in building housing and production buildings. According to the data of the USSR minister of gas industry S. A. Orudzhev, around 60 billion m<sup>3</sup> of gas are used for heating housing, industrial and public buildings. However for heating the buildings built in the 1970's, as a consequence of their reduced insulating properties, 1.6 more fuel is required than for the buildings erected a quarter of a century ago. The obtained savings in capital investments into construction is lost during the very first 2 or 3 years of operation and is incomparable with the expenditures on heating the buildings the life of which equals 50-100 years.<sup>2</sup> Such examples of the nonapparent interchangeability of products from the fuel and energy complex and other types of production resources occur everywhere in economic activity.

Unapparent interchangeability encompasses virtually all types of the production resources of society, including: The means and subjects of labor, the

---

<sup>2</sup>S. Orudzhev, "For Using Gas Thriftily," PRAVDA, 14 July 1978.

live labor of people, and the subjects of nonproduction consumption. Improving the structure of the related sectors of material production is achieved by using the principle of interchangeability in the economic activities of a society not only between the intraspecific and interspecific material resources, but also between the sectors which create products with fundamentally different consumer properties. Analysis indicates broad opportunities for introducing into balance compiling practices the principle of unapparent interchangeability with various combinations of live and embodied labor which, in turn, can have a determining impact upon the choice of the directions for the social division of labor.

Thus, a rise in the efficiency of social production and the efficient use of all production resources presupposes the necessity of determining optimum ratios between the resources at each enterprise and in each sector. The balance work should also set optimum proportions between the related sectors and reproduction processes. Finally, it is essential to achieve an organic coordination of the physical and value balances.

The solution to the listed problems requires a fundamental change in the schemes and forms of the balances and the methodology of compiling them. Thus, for determining the optimum ratios between resources at the enterprises, it is essential that the balances reflect the conditions of efficient production and use of each individual resource. For this it is essential first of all to change the schemes and forms for the single-product physical balances, and introduce into the system of balances indicators by which it would be possible to assess the efficiency of production and utilization of the resource being balanced, as well as to work out a methodology for optimizing these balances. Obviously the system of single-product balances must incorporate indicators which reflect, on the one hand, the value conditions of resource reproduction, and on the other, the economic effect obtained by the national economy in utilizing the resource being balanced. In addition, the balances should reflect the results of correlating the expenditures on producing the resource being balanced with the effect obtained from its use, considering both the apparent and the unapparent interchangeability of the resources.

The introduction of value indicators which reflect the conditions for the reproduction and use of resources into the system of single-product material balances necessitates their conversion into physical-value balances. Examples of constructing and optimizing single-product balances in accord with the stated ideas are illustrated in the provided tables 1 and 2. Each line of such a balance, along with the sources and volumes of resource production, gives the correlated expenditures of live labor, means of labor and subjects of labor, as well as the corresponding economic effect. The economic effect can be expressed in a multisided economy, including: the release of materials and various types of fixed productive capital, and a rise in the productivity of live labor. This necessitates the incorporation of indicators for capital intensiveness, material intensiveness and labor intensiveness in the physical-value balance for describing the obtained effect.

These same indicators are used for describing the expenditures related to the reproduction of the resource being balanced.

Optimization of a single-product balance is complicated by the fact that this requires an ascertaining of the economic effect related to the apparent and unapparent interchangeability of production resources. For this reason the problem should be solved in two stages. For each of them, a corresponding scheme of the balance, the indicators as well as the optimization procedure are worked out.

In the first stage, the economic effectiveness of the variations of the unapparent interchangeability of the resources is determined, and then one ascertains the amount of demand (D) for the resource being balanced which would provide the economic effect from the use of a unit of resource ( $E_z$ ) not below the normed level (N), and this can be written in the following formula:

to find  $D = \sum_{i=1}^n y_i$  with  $E_z \geq N$ , where  $y_i$  -- the demand of consumer i for the

resource being balanced.

From the balance one excludes the consumers which do not meet the minimum efficiency standard (N) for the use of the given resource. This same problem can be formulated differently: to determine the amount of demand for the resource being balanced which would provide for a maximum rise in the efficiency of its production and use. Such a positing of the problem becomes possible in instances when the efficiency of the balance variations is above a standard level.

The second stage in the work of optimizing a single-product balance is related to defining the optimum demand for the resource being balanced. For this input-output tables (matrices) are compiled for the production and distribution of the obviously interchangeable resources. Along the vertical in them the types of interchangeable resources are designated and along the horizontal the resource consumers. Optimization comes down to solving the extremal problem, that is, finding an optimum variation for the distribution of the interchangeable resources among the consumers in accord with the selected criterion, and this can be written in the following manner:

to find the maximum of the function  $F = \sum_{i=1}^n \sum_{j=1}^m x_{ij} E_{ij} \rightarrow \max$  with the con-

straints  $E_{ij} \geq 1, \sum_{i=1}^n y_j = \sum_{j=1}^m y_j,$

where  $y_{ij}$  -- the consumption volume of resource i by consumer j;

$E_{ij}$  -- the criterion for selecting the optimum variation.

Table 1

Balance item	Full expenditures													
	Variation			основные производственные фонды, млрд руб										
				а		б		в		г		д		
				на единицу ресурса		на единицу ресурса		на единицу ресурса		на единицу ресурса		на единицу ресурса		
Variation			Variation			Variation			Variation			Variation		
									</					

Key: a--live labor of annual workers, 1000 persons; b--fixed productive capital, billion rubles; c--per unit of resource; d--total; e--resources of sugar beet, million tons; f--sugar content in beet, %; g--sugar resources in beet, million tons, h--resource utilization; i--losses; j--of beets in transporting and storage; k--million tons; l--of sugar, %; m--in transporting and storage of beets; n--in production; o--in molasses; p--sugar and beet yield, %; q--sugar production, million tons; r--quantity of refinable beet, million tons; s--release of resources, million tons; t--efficiency of substitution\*

\* E = Released resources

\* E = resources for substitution

Table 2

1 Статья баланса	2 Номер источника		3 Характеристика источника ресурса				4 Эффективность потребления ресурса руб.				5 Оптимальный план			
	6 ресурсы А и В		7 объем производства ресурса		8 затраты на единицу ресурса, руб.		9 на единицу ресурса		10 на 1 руб. затрат		11 объем производства и потребления ресурса, ед.		12 максимальная величина эффекта, руб.	
	А В		А В ед.		А В		А В		А В		А В		А В	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Источники ресурсов  13	1	30	20	17,0	20,0	25	23,0	1,470	1,150	50	20	73,50	23,0	
	2	15	20	19,5	20,5	21	22,5	1,077	1,096	10	20	10,77	21,96	
	3	13	30	21,0	21,0	21	22,0	1,000	1,048	-	-	-	-	
	4	12	20	23,0	21,5	20	11,0	0,870	0,977	-	-	-	-	
	5	10	10	25,0	22,0	19	21,0	0,760	0,955	-	-	-	-	
Потребности в ресурсах 14	100										60	40	81,27	44,96

Key: 1--Balance item; 2--Number of source; 3--Characteristics of resource source; 4--Efficiency of resource consumption, rubles; 5--Optimum plan; 6--Resources A and B; 7--Production volume of resources A and B, units; 8--Expenditures per resource unit, rubles; 9--Per resource unit; 10--Per ruble of expenditures; 11--Volume of resource production and consumption, units; 12--Maximum amount of effect, rubles; 13--Resource source; 14--Demand for resources.

This problem is solved using already known mathematical methods. In optimizing the production and allocation of resources, an optimum variation of a single-product balance is determined.

The optimizing of the physical-cost balance is closely linked to the elaboration of the efficiency standards the minimum level of which will regulate resource allocation. The standards can be set using statistical methods which would define the amount of the resource interchangeability coefficients. Since the effect from resource utilization should justify the expenditures on producing the resources, it is essential that the established standards (or interchangeability coefficients) exceed one. With an effect less than the expenditures on creating the resource being balanced, the indicator for the economic efficiency will be less than one and less than the standard. In this instance the replacing of some resources by others becomes unjustified, as the economic efficiency of social production will decline and not rise. As a result the necessity arises of restricting the production volume of the resource being balanced to a level which would provide a minimum possible effect from its utilization. This means that from the single-product balance it is essential to exclude the consumers which do not provide the

standard efficiency level. Correspondingly one closes off the source of the resource which diverts from the national economy exceptionally high expenditures of live and embodied labor. Thus, the proportions of material production are optimized in accord with the requirement of increasing its efficiency.

As an example illustrating the procedure for optimizing a single-product balance with unapparent resource interchangeability, let us examine the balance for sugar and beets using hypothetical figures (Table 1). The balance gives three variations of the production volumes and the demand for beets for producing sugar. The first conditionally reflects the achieved parameters of beet production and distribution, and the second the conditions for the interchangeability of the sugar beet resources. The carrying out of the second variation involves the channeling of capital resources into beet production for implementing a range of measures which would increase the sugar yield of the beet from 15.2 to 18.2 percent. The third variation of the balance reflects the conditions for the interchangeability of losses (sugar beet and the sugar in it) and the capital investments which would eliminate these losses in the transporting, storage and processing of the beets. The given variation requires an increase in the production capacity of the sugar industry for processing the beets for 50 days.

The lower part of the balance shows the effect of the interchangeability of sugar beet resources proceeding from the conditions of the unapparent interchangeability, the expenditures of live and embodied labor related to the production of the release sugar beet resources, as well as the effectiveness of their substitution. The latter is determined as the quotient of dividing the expenditures on producing the released resources by the expenditures related to producing the resource to be used. Thus, for the

second variation  $E = \frac{381.5}{39.0} = 9.8$ .

From Table 1 it can be seen that the highest efficiency is found in the variation of interchangeability involving the realization of measures to improve the quality of the sugar beets in beet growing (the second variation of the balance). This makes it possible to reduce the demand for raw materials; for producing the achieved volume of sugar, 56.5 million tons of sugar beets are sufficient instead of the over 85 million tons according to the calculated data. Here from the aggregate of sectors engaged in producing sugar in the nation, over 381,500 annual workers and 4.83 billion rubles of fixed productive capital are freed, and this significantly exceeds the expenditures required for implementing this variation.

As is seen from the example, with the unapparent interchangeability of resources, it is essential to determine and consider the multisided economic effect of an intersectorial nature which determines the sectorial, intersectorial and national economic proportions. This shows that the planning work of compiling a single-product balance involves a complex system of

intersectorial relationships in the entire sphere of material production. Since under the conditions of the unapparent interchangeability the effect and expenditures occur in the related sectors, in the physical-cost balance it is essential to indicate the corresponding amounts of the related (indirect) expenditures of live and embodied labor. For this it is essential to provide fundamentally new information on the indicators for full labor expenditures, fixed capital and material resources. These are worked out on the basis of an intersectorial balance (MOB). There is a rise in the multivariable nature (it is essential to analyze at least three variations) and the complexity of the balance work, and there is greater significance in the question of increasing the efficiency of social production. At the same time the scientificness of national economic planning is increased. Such calculations should be compiled by the superior levels of the planning bodies involving the forces of the various scientific organizations conducting research in the area of improving the intersectorial proportions.

An example of optimizing a single-product balance under the conditions of apparent interchangeability of the resources is illustrated in Table 2. The variations of the resource part of the balance are characterized by a matrix for the production volumes of the interchangeable resources A and B, by the expenditures on producing each unit of the resource and by the obtained economic effect for the consumer (calculated per unit of resource or per unit of expenditures in cost terms). The right hand portion of the table gives the optimum variation for the production and consumption of interchangeable resources.

At this stage of optimizing the balance, a difficulty arises related to selecting the optimization criterion. At present the given problem has not found a correct solution because the optimizing of the resource part of the balance is carried out autonomously from the optimizing of the distribution part. For this reason, as the optimization criterion for the resource part of the balance, the indicator is used for the least total expenditures on the production of the resources, and for the distribution part the maximum demand for resources. The shortcomings of the single optimizing of the balance are disclosed as soon as the question arises of how effective is the use of the interchangeable resources for the consumers. But if the balance is optimized proceeding from the necessity of obtaining a maximum effect for the consumer, then the results of the optimization will contradict the results of optimizing the resource part of the balance.

The contradictions are resolved if the indicators for the efficiency of the production and consumption of the resources are used as the optimization criterion. This indicator is determined by comparing the effect of using the resource by the consumer (columns 6 and 7 of Table 2) with the production expenditures (columns 4 and 5 of Table 2). For example, the efficiency  $E_1$  for the first source of the resource A equals  $1.47(25/17)$ , and for the fourth and fifth source is less than one. The latter are excluded from the balance as not meeting the minimum efficiency standard. But if  $E = 1.075$  is taken as the indicator for the efficiency standard, then the total demand

for the interchangeable resources will be limited to the first two sources and will be 105 units.

With our constraint which determines the optimum plan for the production and distribution and resources A and B, additional conditions are set: the total demand for the interchangeable resources A and B should not exceed 100 units. With this constraint, the maximum efficiency from the production and use of resources A and B is provided by the variation of 60 units of resource A and 40 units of resource B. Correspondingly the optimum variation for the single-product balance for resource A will be formed from the production and consumption of 50 units for the first source and 10 units for the second. The production and distribution volumes for resources A and B will change as soon as the third type of interchangeable resource C appears, and for which the efficiency indicators are higher. An increase in its production will narrow the demand for resources A and B.

Consequently, in the course of determining the maximum efficiency for the production and consumption of interchangeable resources, their proportions change not only between the production sources but also among the consumers. This necessitates the compiling of comprehensive material balances, as well as their optimization on a fundamentally new basis, with the simultaneous optimization of the resource and distribution parts.

The second stage of optimizing a single-product balance further refines the first. The refinements necessitate a revision of the proportions of material production established in the first stage. For example, the demand of the population for carbohydrates can be satisfied not only from sugar but also by increasing glucose production from potato and corn syrup. If the share of glucose in the total balance for the population's demand for pure carbohydrates reaches 10 percent, then correspondingly a need arises for reducing the share of sugar and beet production. Such a refinement arising out of the conditions of the apparent interchangeability of beet sugar and glucose made from corn and potato raw materials introduces a substantial correction into the beet and sugar balance. Simultaneously the need arises of revising the structure and proportions of the expanded reproduction of agricultural raw materials and the structure of the food sectors of industry, as well as all the related sectors of the national economy.

Thus, the transformation of the physical single-product balances into physical-cost single-product balances makes it possible to resolve the following problems. First of all an opportunity appears immediately in working out the balance to correlate the effect and the expenditures involved in the production and use of the resource being balanced, and on this basis to carry out calculations to optimize the single-product balance in accord with the demands and criteria which must be used to assess the balancing of the productions in material production.

The constructing of optimum physical-cost balances leads to the formation of an optimum structure of the related types of production and sectors. The

physical-cost balances encompass virtually the entire sphere of material production and the entire national economic organism, and consequently the optimum national economic plan can be constructed on their basis.

The introduction of the cost indicators into the physical balances makes it possible to achieve an organic coordination of the physical, cost and general economic proportions.

The optimization of a single-product physical-cost balance encompasses the entire process of national economic planning, and for this reason requires a further improvement in the techniques and organization of plan elaboration. The economic effect provided by the compiling of an optimum national economic plan fully justifies the necessity of carrying out the corresponding organizational measures.

COPYRIGHT: Izdatel'stvo "Ekonomika", "Planovoye khozyaystvo", 1979

10272

CSO: 1820

## COUNTERPLANNING AS A MANAGEMENT TOOL

Moscow EKONOMICHESKIYE NAUKI in Russian No 5, May 79 pp 16-21

[Article\* by Ye. Torkanovskiy, professor and doctor of juridical sciences:  
"Counterplanning in the System of the Economic Mechanism"]

[Text] P. Bunich names planning and socialist competition among the general functional subsystems of the mechanism for management of the economy.<sup>1</sup> The economic mechanism by which the socialist economic system functions cannot be conceived without interaction of these very important components. The interaction of national economic planning and socialist competition is a complicated and multifaceted process, but it can be said that in the present stage it is manifested most fully in the movement for adoption and fulfillment of counterplans.

Counterplans were described at the 25th CPSU Congress as an important initiative being followed by the entire country. USSR Gosplan, the USSR State Committee for Labor and Social Problems, the USSR Central Statistical Administration and the AUCCTU have annually been adopting specific legal acts establishing the drafting procedure, incentive procedure and procedure for recording fulfillment of the counterplans of enterprises and production associations.<sup>2</sup> Analysis and summarization of experience in applying these enactments made it possible for these bodies to adopt on 28 January 1977 the Regulation on Drafting Procedure, Incentive Procedure, and Procedure for Recording Fulfillment of Counterplans of Enterprises (Organizations) and Associations in the 10th Five-Year Plan.<sup>3</sup> The problems as to the nature of counterplans, their peculiarities and their place in the economic mechanism have been treated rather broadly in the literature in recent years.<sup>4</sup> However, there has not been in the literature a uniform solution to the problems of the nature of the counterplan, its relation to the state plan, and its place in the economic mechanism. Different interpretations as to the nature of the counterplan and the tasks of counterplanning are noted both in theory and practice, which cannot be conducive to the spread and greater effectiveness of this important initiative.

\* A discussion of the problems of the structure of the economic mechanism of advanced socialist society and of the most important ways of improving it.

Hardly anyone doubts that counterplans and socialist obligations have a common genesis, since the counterplan is just as much based on initiative and its adoption and fulfillment are just as voluntary as any other socialist obligation. The differences here are differences of kind: the counterplan is like a higher form of socialist obligation which has certain peculiarities.

Some researchers suppose that approval by the higher-level organization transforms counterplans from socialist obligations into state planning assignments, whereby they enter into the system of national economic planning as a compulsory element.<sup>5</sup>

Advocates of this position see the transformation of socialist obligations adopted voluntarily into planning assignments prescribed for unconditional fulfillment as the principal way of achieving organic unification of planning and competition. Taking as their point of departure that the regulation dated 28 January 1977 provides for the counterplan to be submitted to higher-level authorities as a part of the draft of the annual plan and for it to be approved by the ministry, they regard the counterplan as one of the stages of planning and assume that competition is necessary not only in the stage of fulfillment, but also in the stage of shaping the plan.

The need for inclusion of the counterplan in the state plan is backed up by important practical considerations, which can be reduced to the two which follow.

1. In the context of the increasing conformity to plan of economic development in a mature socialist society, it is not always a good thing to over-fulfill the plan: additional resources are spent on the production of above-plan output which, had they been included in the plan, could have been used with a substantially greater benefit; moreover, there are quite a few types of products which the consumer does not need ahead of schedule or in an amount exceeding the plan assignment. So that above-plan production does not result in pointless expenditures of social labor, an aggravation of the shortage of material resources and other adverse consequences, counterplans need to be included in the state plan. This makes it possible to take all potentials and capabilities of the given collective into account, to correlate them with the potential and capabilities of related enterprises, and to achieve a fuller balance in the socialist economy and also better utilization of the entire output produced.

2. In present evaluations of the labor contribution to the overall results of performance preference is not uncommonly given to enterprises which over-fulfill comparatively slack plans. The counterplan helps to intensify the interests of enterprises (associations) in adopting strenuous plans, whereby it is possible to compete for fulfillment rather than overfulfillment of the plan.

The arguments we have set forth make the idea of transforming counterplans into state plans very attractive and one that needs serious analysis. To be sure, in its present form it does not seem to us suitable for implementation, but we cannot exclude the possibility of a change of circumstances in which a change in the treatment of the counterplan would seem advisable. Moreover, it can be foreseen with quite a bit of confidence that in the future, when the centralized plan ceases to be regarded as a legal category and criterion of material incentive, when the measure of labor is determined by individual capabilities, inclusion of socialist obligations in the plan will obviously be one of the essential elements of communist self-management in the production sphere. But under present conditions, we repeat, the idea of including the counterplan in the state plan does not seem sufficiently realistic either on theoretical or practical grounds.

The arguments presented to support this point of view apply not only to counterplans, but also to socialist obligations as a whole. After all, the proposal calls for a radical change in the relationship between the obligation and the plan, i.e., a radical restructuring of the relationship between competition and planning. At present, as we all know, the plan is regarded as the point of departure for competition, since it is the starting point for drafting socialist obligations. Every individual or collective compares and measures his potential and capabilities against the planning assignment. It is in this context that the obligation is adopted to perform it ahead of schedule, at lower cost, with higher quality, and so on, i.e., to exceed the planning assignment established by the state thanks to additional capabilities brought into play by competition. Consistently with the idea we have been discussing, the plan should be regarded no longer as the point of departure, but as the end point of competition: fulfillment of the obligations embodied in the plan will indeed be fulfillment of the plan.<sup>6</sup>

The proposed "changing of places" by the socialist obligation and the plan could only be welcomed if it were possible to "reconcile" the voluntary character of the socialist obligation and the compulsory character of the plan. Nonfulfillment of the state plan, as we know, constitutes a violation of law which sets in motion the law enforcement apparatus and results in the application of economic and sometimes even administrative penalties. No one has ever associated an offense of that kind with nonfulfillment of the counterplan, nor does anyone do so now.

Moreover, it is even being proposed that "the question be taken up of a favorable assessment of the performance of enterprises in cases when for objective reasons the counterplan is not fulfilled, though the annual plan originally approved has been fulfilled."<sup>7</sup> It is difficult to understand how one can look upon the state plan (i.e., a plan which is mandatory) as an assignment whose nonfulfillment does not result in reduction of the enterprises' incentive funds, does not deprive the managers of their bonuses, and does not result in a poor evaluation of the collective's performance. It seems obvious in this light that fulfillment of the counterplan is a moral duty, but not a legal responsibility on the part of the work collective.<sup>8</sup>

And this means that the counterplan cannot be regarded as a planning assignment.

Of course, one could in principle impart a mandatory attribute to the approved counterplan and establish for its nonfulfillment the same kind of accountability as for violation of the state plan. But this kind of solution can hardly be considered advisable. One could hardly count on initiative, on the effect of the force of example, or on a desire for self-expression, without which competition and labor rivalry are unthinkable--i.e., the essence of competition--if engaging in them entails a threat of coercion by the state, if disadvantageous consequences pertaining to property should occur, and if disciplinary penalties are enforced.

For all practical purposes inclusion of counterplans in the state plan is identical with worker participation in drafting the state plan of which counterplanning is a part. Yet these are different forms of participation of the masses in management. As we know, the democratic character of socialist planning lies in the fact that every planning assignment (regardless of its interaction with competition) is the result of joint efforts of the higher-level agency and the collective of the enterprise to which it is assigned. All economic organizations (both those adopting a counterplan and those which do not) prepare draft plans (movement of the plan "from bottom upward"), and then on the basis of these draft plans the state planning assignments are approved (movement of the approved plan "from top downward"). Applying this planning procedure, we still have not succeeded in ensuring sufficiently full motivation to draft and adopt strenuous plans. This can hardly be achieved by the mere fact that the movement of the draft plan "from bottom upward" takes on the name counterplan. What sort of additional incentives will motivate managers and the work collective to adopt a truly strenuous plan? What will be different as compared to the present procedure for participation of the masses in drafting the state plan? Wouldn't the proposed changes have the result that we, without having improved planning (since the workers and their collectives have a duty even now to make proposals in the draft of the state plan), would at the same time lose such an important instrument in competition as socialist obligations, which were always aimed at overfulfillment (in qualitative and quantitative parameters) of the state plan? Those who advocate including socialist obligations in the plan provide no answer to these questions.

However, as experience shows, the very fact that the counterplan is submitted to the higher-level organization along with the draft of the annual state plan compelled a number of enterprises in 1978 (when this procedure first went into effect) to adopt counterplans which were essentially symbolic. For instance, enterprises of the Ministry of Chemical Industry adopted for 1978 socialist obligations to overfulfill the product sales volume plan by 115 million rubles, but they included only 6.5 million rubles of this, or 6 percent of the socialist obligations, in counterplans; for enterprises of the Ministry of Petroleum Industry--8 percent. For industrial ministries as a whole the volume of sales covered by counterplans of enterprises and organizations increased 600 million rubles over the annual plan,

whereas socialist obligations adopted for 1978 amounted to 4.6 billion rubles. This means that the feasibility of producing about 90 percent of the output which will be obtained in 1978 through socialist competition was not determined in advance, that counterplanning is not performing one of the principal functions for which it is being organized, and is not ensuring planned, balanced and harmonious development of relations in socialist competition. Are we to be convinced thereby that inclusion of the socialist obligations or counterplan in the state plan would make the latter strenuous? Are we not witnesses that not only the state plans, but also counterplans or socialist obligations are being overfulfilled manyfold? For instance, in 1977 enterprises and associations of the Ministry of Automotive Industry overfulfilled their counterplans 4.3-fold, those of the Ministry of Petroleum Industry 4.3-fold, the Ministry of Power and Electrification 3.4-fold, and enterprises and associations in Georgian SSR fourfold, Latvian SSR 3.7-fold, Azerbaydzhan SSR 3.4-fold. At individual enterprises the counterplan is overfulfilled even more substantially. For example, the Kiev Experimental Machinery Plant, which in addition to performance of its tasks in the creation of new machines, manufactures products on a series basis, which had an annual sales program of 771,000 rubles, adopted a draft counterplan amounting to 15,000 rubles and submitted it to the higher-level organization for approval. The latter approved the counterplan only in the amount of 5,000 rubles, but in 9 months of 1977 the enterprise actually exceeded the output plan by 50,000 rubles, i.e., surpassed the approved counterplan 10-fold! These cases are indicative that counterplans, just like state plans, are in many cases far from optimal.

We need to improve the soundness of state planning so that we can make an objective assessment of how strenuous planning assignments are. Otherwise we cannot be confident of the strenuousness either of the state plan or of the counterplan. The work of devising the set of norms and standards used in planning is, of course, a very laborious and complicated one. But the state of the art now possesses sufficiently refined methods of calculating norms and standards, and the needed computer equipment is available. This is a soluble problem. The attempt to substitute the counterplan for a state plan based on standards creates the illusion that this complicated task can be bypassed, and therefore it cannot be beneficial either to improvement of planning or to improvement of the organization of competition.

It is important to distinguish the two concrete forms of participation of the masses in management of production: participation of the masses in planning (an element of the national economic planning system) and adoption of counterplans (an element of the socialist competition system). In the former case planning assignments are revised on the basis of approved norms and standards in view of the specific conditions of production; in the latter obligations are assumed to surpass the established norms and standards thanks to the additional energy aroused by competition. In the former case we are talking about a conscientious attitude toward one's job, about taking into account all the circumstances that have a bearing on fulfillment of the plan. In the latter case it is not simply a question of conscientious work

invested in accordance with the standard of measurement established by the state, but of creative work based on initiative, work that is generating new ideas and principles and new procedures, which make it possible to surpass that standard of measurement.

Confusing these forms of worker participation in management has adverse consequences in practice: in some cases the counterplan is devised by eliminating mistakes in planning, while in others the initiative and creativity of the collective are looked upon as a regular and indispensable correction of the planning assignment from below, as a result of which the ministry merely increases the planning assignment.

We must above all bear in mind that the planning assignment includes not only targets for the volume of sales and the basic list of products, but also such indicators as the level of profitability, production cost, labor productivity, and so on. It is always desirable for the latter to be overfulfilled. As for the amount of output, it can and is restricted by the set of instruments applied in the organization of competition in those cases when this is dictated by the requirements of proportional development. These instruments include public defense of socialist obligations, their co-ordination within the enterprise, and the approval of counterplans by the higher-level organization. In both cases we are talking about management of the creative initiative of the masses, about guiding it in the necessary direction. It would seem beyond question that in applying these and other methods of pressure on competition it is possible to completely exclude cases when obligations are adopted to exceed the planned output of products for which there is no market.

It is obvious that methods reflecting the democratic foundations of competition, and not merely a threat of state enforcement, should also ensure that due concern is shown about fulfillment of socialist obligations. It is self-evident that a creative attitude toward their work on the part of the actual participants in competition cannot be achieved by the measures of law enforcement. Yet that is not a bad thing. We should take into account that the threat of coercion, or accountability under the law, is not the most effective determinant, even in the legal regulation of economic relations. So much the less can it be regarded as the principal motive of behavior in relations not regulated by law. But this certainly does not mean that nonfulfillment of socialist obligations does not entail any sort of responsibility. On the contrary, this is where we come to the concept of responsibility to keep one's word, to fulfill unconditionally an obligation that has been assumed voluntarily.

The expansion and extension of planning relations in the society of advanced socialism does not, it seems to us, come down to including absolutely all social relations in the state plan. The essence of this process obviously lies elsewhere: in the extension of planned development to these relations in forms that reflect and take into account the peculiarities of the given category of social relations. Thus it seems to us that the current problems

of including counterplans in the economic mechanism can and should be solved not by transforming the latter into an element of the national economic planning system, but by using their peculiarities as an element of the system of socialist competition, specifically by imparting to counterplans specific attributes that do not alter their socioeconomic nature. In this connection we need to discuss the peculiarities of counterplans.

The Supplemental Guidelines on Drafting of Counterplans for 1978, approved on 8 February of this year by USSR Gosplan, the USSR State Committee for Labor and Social Problems, the USSR Central Statistical Administration and AUCCTU, refer to the counterplan as a higher form of socialist obligations.<sup>9</sup> This is a very far-reaching and very important formulation. It needs to be interpreted, and above all we need a straightforward answer to the question of how this higher form differs from the other forms of socialist obligations.

One of the principal distinguishing features and also advantages of the counterplan is that it is systematic in nature. This systematic quality results from its approval by the higher-level organization, an act which solves several problems. First of all, it guarantees that the counterplan is realistic: if the ministry approves the counterplan, then along with the enterprise it bears responsibility for its support in terms of materials and equipment. Second, that approval guarantees the advisability of adopting the counterplan, i.e., that the national economy does have a need for the product in question. Consequently, the act of approval by the ministry imparts a planning attribute to the initiative of the workers and reflects an overall rise in the role of planning in the economic relations of the society of advanced socialism.

Thus the first peculiarity of counterplans lies in the fact that along the entire path of their preparation--from the work station to approval by the higher-level organization--a procedure is established that guarantees that the obligations assumed by participants in competition will be systematic in nature.

Another important peculiarity of counterplans lies in the economic character of their content. The socialist obligations--both collective and individual--usually contain a broad range of goals which participants in competition will try to achieve: economic, social, educational, ideological and others, which the individual or collective assumes a commitment to achieve. The obligations formulated in counterplans are pronouncedly economic in nature, and the counterplan differs from other obligations that are economic in nature by embracing only the centrally planned economic indicators of the enterprise.

In practice the makeup of counterplans is artificially impoverished in some cases, while in others it is expanded and merged with other socialist obligations. For instance, in many counterplans there is a clear predominance of volume indicators aimed at increasing output. A substantially smaller

number of counterplans are oriented toward reduction of production cost, toward improvement of quality, toward a rise of labor productivity. In 1974, for example, only 19.4 percent of enterprises envisaged in their counterplans a rise in labor productivity; the figures in later years were 18.9 percent in 1975, 14 percent in 1976 and 15.9 percent in 1977.

The obvious need to alter the one-sided orientation of counterplans does not signify, however, that it is advisable to include in them a large number of diverse indicators resulting from the desire to have the counterplan cover the entire range of production tasks. The indicators of economic performance which are not assigned to the enterprise (association) on a centralized basis (for example, the rise in the shift coefficient of equipment operation, speeding up the rate of turnover of working capital, and so on), should not be included in the counterplan, for all their importance.

Finally, an important peculiarity of counterplans is the material incentive procedure related to their fulfillment. Overfulfillment of the state plan envisaged in socialist obligations comes into contradiction with the cost-accounting motivation of enterprises, since it results in a 30-percent reduction of the rate of transfer to incentive funds (with respect to above-plan output). The incentive procedure included in counterplanning is fully in line with the cost-accounting interests of the enterprise, since when output exceeds the plan and has been included in the counterplan, the rate of the deduction to incentive funds is not only not reduced, but it doubles.

The advantages of the counterplan we have set forth make it possible to expand the sphere of planned regulation of the process of socialist reproduction, to include in that sphere an additional benefit obtained thanks to the additional energy awakened by socialist competition, and at the same time to plan that benefit in a particular form that is appropriate to the nature of competition. This is indeed why the counterplan is regarded as a higher form of socialist obligations, as one of the most promising and perfect forms of organizing competition.

The peculiarities of the counterplan we have taken up make it possible to formulate certain conclusions that have practical importance. First of all, by virtue of the fact that the counterplan represents obligations of the collective adopted "counter" to the centrally planned targets, it should be regarded not only as an integral part of socialist obligations of the enterprise, but indeed as their central and pivotal part around which all other obligations are grouped. And this means that the counterplan and socialist obligations for one and the same indicators cannot be adopted simultaneously or almost simultaneously (of course, we are not referring to those cases when new potential turns up in the process of fulfillment of the counterplan and adoption of socialist obligations or, still better, correction of the counterplan are necessary). The counterplan should become the universal form for organizing competition. Of course, counterplanning is widespread even now. In 1977 counterplans pertaining to the volume of sales were drafted and adopted by 13,900 industrial enterprises and production associations, which represents 37.3 percent of their total number. But this is

not enough. There are no enterprises for which successful fulfillment of centrally planned indicators would not be the most important task. Nor should there be any enterprises which do not adopt a counterplan. When counterplanning becomes universal, socialist competition will take on a new thrust and will rise to a qualitatively new level. At the same time this would eliminate the difficulties associated with summing up the results of competition, when it is necessary to compare the performance of enterprises which adopted counterplans and those which did not.

#### FOOTNOTES

1. Bunich, P., "The Economic Mechanism of Advanced Socialist Society," *EKONOMICHESKIYE NAUKI*, No 4, 1978, p 40.
2. *EKONOMICHESKAYA GAZETA*, No 4, 1974, p 15; No 45, 1974, p 14; No 6, 1976, p 22.
3. *EKONOMICHESKAYA GAZETA*, No 7, 1977, p 7. (Hereafter referred to as the Regulation dated 28 January 1977.)
4. For example, P. V. Grechishnikov, "Napryazhennyye proizvodstvennyye plany i sotsialisticheskoye sorevnovaniye" [Strenuous Production Plans and Socialist Competition], Moscow, 1973; and by the author: "Sovernovaniye na etape razvitogo sotsializma (kharakternyye cherty, osobennosti organizatsii, kriterii effektivnosti)" [Competition in the Stage of Advanced Socialism (Typical Features, Organizational Peculiarities, and Efficiency Criteria)], Moscow, 1977; "Sotsialisticheskoye sorevnovaniye i sovershenstvovaniye yego organizatsii" [Socialist Competition and Improvement of Its Organization], edited by D. N. Karpukhin and K. G. Krupnov, Moscow, 1975; "Sorevnovaniye v razvitoi sotsialisticheskoi obshchestve" [Competition in Advanced Socialist Society], editor in chief Ye. I. Kapustin, Moscow, 1977; V. K. Fedinin, "Sorevnovaniye: politiko-ekonomicheskiye aspekty" [Competition: Political-Economic Aspects], Moscow, 1978; etc.
5. Voyeykov, M., "Organization of Socialist Competition as an Element of the Economic Mechanism," *EKONOMICHESKIYE NAUKI*, No 11, 1978, p 37.
6. The question that is usually put is this: "What is better: to incorporate socialist obligations into the plan, thereby ensuring them material and other resources, sales, and so on, or to adopt some over and above the plan, when it is possible that disproportions could occur, the capital could be put to idle use, and so on?" There can be no doubt, of course, about the answer to this question. But it is pointless to put the question in this form. We first should answer some other questions: Is it possible in this stage of economic development to achieve that incorporation, will it guarantee adoption of truly strenuous plans by work collectives, will it create the conditions most conducive to development of creative activity?

7. Bachurin, A. V., "Democratic Centralism in Planning," EKONOMICHESKAYA GAZETA, No 32, 1978, p 7.
8. We should note that enhanced motivation to adopt above-plan obligations not involving the application of legal penalties is well known to our economic practice. For a long time now there has been the system of supplemental (incentive) premiums for sale of above-plan agricultural products to the state. Socialist obligations pertaining to such sales are not incorporated in planning assignments, and their fulfillment is not guaranteed by the measures of state coercion. In this sense the character of socialist obligations in the sector of agriculture is identical to counterplans in the sphere of industrial production. The only difference is that under present conditions the supplemental delivery of farm products is deemed advisable and therefore there is no need for approval by higher-level organizations.
9. EKONOMICHESKAYA GAZETA, No 10, 1978, p 16.

COPYRIGHT: "Ekonomicheskiye nauki," 1979

7045

CSO: 1820

## PLANNING TECHNIQUES SINCE WARTIME REVIEWED

Moscow PRAVDA in Russian 31 May 79 p 2

[Interview with Nikolay Pavlovich Lebedinskiy, deputy chairman of USSR Gosplan, by PRAVDA correspondent V. Parfenov: "Traditions and Contemporaneity From One 5-Year Plan to the Next"]

[Text] The present 5-year plan is the 10th stage in development of the Soviet economy and was prepared by the pleiade of previous Soviet 5-year plans. As though leaping through the pages of a great book, we look with enthusiasm and pride over the distance of half a century as we think of the road that has been traveled and summarize the experience that has been gained. Nikolay Pavlovich Lebedinskiy, deputy chairman of USSR Gosplan, spoke with a correspondent of PRAVDA about traditions and contemporaneity in socialist planning.

Question: Half a century ago, when the First Five-Year Plan was adopted, our enemies in the West regarded it as "propaganda of the Bolsheviks" and cast doubts on the realism of what had been planned. What is the principal advantage of the planned system? What has it produced in half a century?

Answer: The unprecedentedly high growth rates and scale of economic development envisaged by the First Five-Year Plan seemed like mere fantasy to many at that time. But our enemies denounce the planned system even now because they detest socialism.

It is well known that the plan covering the first 5-year period was fulfilled in 4 years and 3 months. It laid the foundation of the socialist economy. The Soviet Union was transformed into an industrial state. Even 40 years ago, after fulfillment of the Second Five-Year Plan, our country had taken second place in the world with respect to the total volume of industrial output. The strong economic and defense potential made it possible to win World War II and to crush fascism, a most powerful adversary. This became possible thanks to a combination of that potential with the tremendous moral strength and unity of our people and the organizing and leading role of Lenin's party.

The principal advantage of the Soviet planned economy is that by making active use of the objective economic laws of socialism, it facilitates the best organization of the process of expanded reproduction in the interests of the entire society and of every citizen. At the same time planning affords the possibility of determining those goals which are most important to a given stage and of concentrating resources on their attainment.

In half a century our homeland has reached heights of economic and social development which previously could not be imagined even by people with the most prolific imaginations. Fundamental changes have taken place in the country's economic geography. Hundreds of new cities and large regional industrial complexes have appeared on the map. Blue chains of man-made lakes, gigantic hydroelectric power stations and the vast expanses of virgin land which have been transformed--all these are also the visible fruits of the 5-year plans.

Question: You have long been working in the planning field, you have passed through more than one stage on the official ladder before becoming deputy chairman of USSR Gosplan. What traditional features have remained, and what new features have made their appearance in planning over this half century?

Answer: As a matter of fact I came to work in USSR Gosplan under an assignment from the Komsomol Central Committee in the summer of 1942. This was probably the most difficult time for our fatherland. The enemy was rumbling toward Stalingrad. A large portion of the economically most highly developed regions of the European part of the country were temporarily under the heel of occupiers. Enterprises evacuated to the deep interior of the country were just being started up. It was precisely at that time that our planned system made its capabilities especially manifest.

Planning was completely centralized. Day-to-day figures on the availability of resources and on the state of affairs in all the sectors of the economy were brought together in USSR Gosplan, which became a kind of economic headquarters for the country. Small staffs of Gosplan commissioners were created at the local level; with the help of their subordinate local statistical agencies and inspectors they followed day-to-day progress in fulfillment of assignments and were quick to discover reserve capacity. Planning discipline was extremely strict. There was no question of any people's commissariat or union republic petitioning for an "adjustment" of its assignment, though at times the situation was extremely problematical. Party guidance of the country's economy and the mass heroism of the Soviet people made it possible to rapidly build a mighty military-industrial complex, which supplied the front and rear on an ever growing scale with everything necessary to resist the enemy.

Following the victorious conclusion of World War II, when a sizable portion of the country lay in ruins, the bourgeois press abroad wrote that "it will take the Soviets more than one decade to rebuild what has been destroyed and reach the prewar level." But the western analysts were fooled once again.

Many years have passed since then. The theory and practice of our planning has been improving continuously and has made great strides. Those years brought the discovery, development and adoption of the intersector balance, the methods of linear programming, and models of optimum development and location of sectors and industries. It was an important event when the first phase of the ASPR [Computerized System of Planning Computations] went into operation.

As you see, the present level of planning differs greatly from the previous level. Yet the basic principles and methods of Soviet planning and its cornerstone have remained unshaken, since they have fully justified themselves over half a century. This applies above all to the mandatory character of our plans and to the principle of democratic centralism.

The same can also be said of our 5-year plans. Each of them has its nonrecurring features, and at the same time they have all been bound by the consistent line of the party, which is aimed toward strengthening the economy and defensive capability of the Soviet state and at the rising prosperity of the people.

Question: Our economy is now producing millions of different products. How does one "conduct" such a gigantic orchestra? What sort of role is played by the state plan and economic initiative at the local level, counterplanning and competition?

Answer: You are right. The country is producing more than some 10 million different types and modifications of products. There had to be a study of the demand for each one, the possible volume of production and supply of resources had to be determined; in short, a plan was drafted with respect to all indicators, which were broken down in the form of specific assignments for all those responsible for carrying it out. Can one imagine a "conductor" who could effectively manage such an "orchestra" from the center even with the help of the most up-to-date computer equipment? Of course, this is not possible. Excessive centralization of planning inevitably results in voluntarism and incompetence; it is just as harmful as excessive decentralization.

At the present time, now that the country's economic potential has substantially exceeded the astronomical figure of 2 trillion rubles, the planning system must be thoroughly echeloned. This means that every level of economic management is operative within the limits of its competency, bears full responsibility and possesses full knowledge of the job. The most important condition for effectiveness of such a multilevel system is a considerable enhancement of the role and rights of product consumers, strict adherence to contract discipline, and unfailing pronouncement of penalties for violations.

Socialist competition and counterplanning are expected to reveal unused internal potential for production and to inspire people with a sense of a

thrifty and economical attitude toward material, labor and financial resources. From the First Five-Year Plan to our own day competition has played a tremendous mobilizing role in economic development and imparts a particular dynamism and creative character to the work of the Soviet people.

Question: It is well known that computers are being used in drafting 5-year and long-range plans. What are the results? Is it possible to accurately calculate how much the country will need of, say, energy, bread, steel and footwear in another 10 or 15 years?

Answer: Computer techniques are being inscribed more and more organically into the technological process of preparing plans and checking their fulfillment. Large computer centers with up-to-date electronic equipment have been set up in USSR Gosplan and almost all the gosplans of the union republics. Use of that equipment greatly increases the accuracy, internal consistency and scientific soundness of planning computations. The use of mathematical-economic models even in the initial stage of adoption of the ASPR has saved hundreds of millions of rubles on costs compared to the traditional method of computation. There is no doubt that in the very near future this saving will run into the billions.

As for the accuracy of the planning computations themselves, they do not depend on the computers, which for all practical purposes do not make mistakes, but on the quality of the initial information. That information is worked up by various organizations of ministries and planning agencies. The more thoroughly sound that information is, the more accurate are the computations we obtain. This also applies to those products which you enumerated.

Question: It follows from your answer that the computers make it possible to optimally calculate each sector's needs for material, labor and financial resources. Why does the press sometimes cite cases when production plans are out of joint with the plans for supply of resources to industries and plants?

Answer: A precise calculation of a requirement, its full coverage in balances and distribution plan does not automatically signify the corresponding practical linkage between production plans and the requisite supply of all types of resources. The point is that the planners include in distribution and distribute resources such as rolled products delivered not only from existing enterprises, but also from a certain portion of new capacities to be put into operation. Unfortunately it is not uncommon for the delivery of new shops to be late, for new production operations to be very slow in reaching rated capacity, and the national economy fails to receive the amount of rolled products that was planned. Of course, that state of affairs does not apply to metal alone. The decisive factor in attaining the normal and uninterrupted operation of all the units of the economic mechanism is unswerving observance of state and contract discipline, combined with improved performance on the part of planning agencies and the creation of reserves.

Question: What is being undertaken toward further improvement of the mechanism of the economic system and of our planning?

Answer: This work has gone on more vigorously since the 25th CPSU Congress. Master schemes for management of industry have been introduced, a procedure has been adopted for evaluating economic performance so as to take into account fulfillment of enterprise obligations under contract, the planning of scientific-technical progress has improved, and social problems have begun to be solved more comprehensively. A number of large-scale economic experiments have been set up, including planning the volume of production on the basis of net output instead of commodity output and sales. New conditions for planning and material incentives based on a considerable expansion of their independence within the limits of assignments and economic norms established for the 5-year period have been experimentally introduced for entire ministries. Preparation of comprehensive proposals for further improvement of planning and of the entire economic mechanism is now being completed.

Every day we are straining harder in our work to compile the new 11th Five-Year Plan and the long-range plan up to 1990. At the same time intensive work is being done to prepare the draft of the plan for 1980, the final year of the 10th Five-Year Plan. The party and the people are looking on as personnel of planning and economic agencies tackle this very important test.

7045

CSO: 1820

## PUNCTUALITY OF DELIVERIES RELATED TO PRODUCTION EFFICIENCY

Moscow KHOZYAYSTVO I PRAVO in Russian No 6, Jun 79 pp 35-40

[Article by I. Zamoyskiy, senior staff scientist of the Institute of Industrial Economics of the Ukrainian Academy of Sciences and candidate of juridical sciences]

[Text] Now that the national economy is oriented toward achievement of final results by all units of the economic mechanism, timely and proper quality of product delivery is being advanced to the foreground. As Comrade L. I. Brezhnev has emphasized, "... in the context of the continually expanding production-and-economic relations, strict observance of planning discipline in all units of our economy is taking on exceptionally great importance. It is important that every production collective fulfill its plan assignments and orders on time, maintaining excellent product quality and never letting down their subcontractors or consumers."\* The level of fulfillment of orders from consumers characterizes the level of satisfaction of the needs of society for products of the necessary quality and assortment by those economic entities that figure as suppliers.

Achievement of local goals (fulfillment of plans for the volume of sales, profit, and so on) without synchronization with the final results for the national economy--fulfillment of the delivery plan--causes disruptions in the complicated system of intersector relations, additional losses and costs, and ultimately a deterioration of the final figures for the region and for the national economy. According to certain estimates, the growth rates of the national income in the country can be doubled if disruptions in the supply of materials and equipment to production are eliminated.\*\* Consequently, reinforcement of delivery discipline is an important factor in raising production efficiency and the quality of performance.

\* Brezhnev, L. I., "Leninskim kursom. Rechi i stat'i" [On Lenin's Course. Speeches and Articles], Vol 6, Moscow, 1978, p 356.

\*\* "Ekonomicheskiye sanktsii i distsiplina postavok" [Economic Penalties and Delivery Discipline], edited by V. Mamutov, Naukova Dumka, Kiev, 1976, p 4.

The adoption as of 1 January 1978 of a procedure throughout the industrial sector whereby incentive funds of enterprises and the material incentives for their workers are made directly dependent on the level of fulfillment of orders was aimed at unfailing fulfillment of delivery plans.

How can we ensure that the enterprise will fulfill all its contractual obligations?

It is sometimes asserted that it is practically impossible to fulfill the task of 100-percent fulfillment of orders, since disruptions are inevitable in the supply of materials and equipment, in transportation service or in the production process. Is this actually so?

It would not seem to be. Of course, fulfillment of deliveries depends on many factors. In some cases the enterprise cannot independently correct the causes of particular disruptions. But often references to "objective circumstances" conceal serious mistakes and shortcomings in the organization of production within the enterprise. It is this aspect of delivery discipline that we would like to examine in more detail.

The experience of a number of production collectives in different industries (the associations AvtoZIL and Tulachermet, the Moscow Automotive and Tractor Equipment Plant ATE-1, the Saratov Electrothermal Equipment Plant, the Chusovoy Metallurgical Plant, the Kuybyshev Synthetic Alcohol Plant and many others) proves convincingly that the task of 100-percent fulfillment of orders is completely feasible.

But perhaps certain enterprises achieve this because of some sort of especially favorable conditions, so that their achievement is an exception, but not the rule against the background of not so infrequent failures to fulfill contractual obligations by many collectives which refer to various objective reasons? We must state at once that the success of the advanced enterprises is altogether normal and is the result of purposive work done by work collectives, professional managers, and public organizations to raise the level of organization and to strengthen discipline (planning discipline, contract discipline, work discipline and manufacturing discipline) in all areas of production.

What does this work consist of? If the procedure for evaluation of the economic performance of the enterprise and its worker incentives are to be changed, there must be a new approach to management of production at all its levels. This includes revision of the criteria used in evaluating the performance of economic entities, a psychological shattering of the stereotype which has been harbored for years by certain professional managers who in making managerial decisions think first only of the interests of "their own" enterprise, of their department, but not of consumers, and linkage of the organization of production and economic performance to the task of fulfilling obligations related to deliveries.

Achieving strict fulfillment of every contract obligation to deliver products in the assortment specified, of the quality the customer needs, and by the time which has been set has mainly to do with setting up an efficient delivery management system at the enterprise (to prevent breaches of its own contractual obligations). This system should make provision for the following:

- i. the drafting and adoption of regulations on subdivisions and job instructions for personnel so that the definition of functions, rights and duties is aimed at fulfillment of contractual obligations;
- ii. the drafting and adoption of a delivery plan;
- iii. the organization of the proper recordkeeping on fulfillment of the enterprise's own contractual obligations;
- iv. the orientation of technical-and-economic planning and production operation planning toward fulfillment of contractual obligations;
- v. the detailing of responsibility for a breach of contractual obligations to structural subdivisions and to the individuals responsible;
- vi. organization of a system of internal claims and penalties in mutual relations among structural subdivisions of the enterprise for tardy and low-quality (incomplete) delivery of raw materials, intermediate products, supplies, parts, assemblies, and so on;
- vii. organization of a material incentive system which orients all worker categories of the enterprise toward fulfillment of obligations involving delivery of products to specific consumers by the time and in the assortment specified and of the requisite quality;
- viii. broad development of socialist competition within the enterprise for timely and proper fulfillment of contractual obligations.

As we see, the essence of this problem lies in the comprehensive approach to management of production, which best suits the interests of the national economy and economic entities, raises production efficiency and improves the quality of performance.

Restructuring the organization of production so as to guarantee fulfillment of contractual obligations made it possible for the Saratov Electrothermal Equipment Plant to completely fulfill its contractual obligations: in the last 5 years there have been no claims against it either concerning quality or delivery time. The economic benefit from orienting internal activity in the enterprise toward unfailing fulfillment of assignments and obligations concerning product deliveries amounted to 850,000 rubles during the Ninth Five-Year Plan alone. The more even pace so that crash efforts were not necessary also made 367 persons available. At the Kuybyshev Synthetic Alcohol Plant restructuring of the highly complicated mechanism for management

of the enterprise and of the entire organization of socialist competition in order to achieve unconditional fulfillment of the delivery plan made it possible to raise the level of fulfillment of contractual obligations to 99.7 percent in 1 year.

Research done by the Institute of Industrial Economics of the Ukrainian Academy of Sciences provides convincing evidence that consistent adoption of a system for management of deliveries makes it possible to sharply increase the level of fulfillment of the enterprise's own contractual obligations, to reduce unproductive expenditures and losses resulting from violations of conditions of business contracts both on the part of the supplier and also his consumers. For an entire group of enterprises which had adopted this system the level of underdelivery of products dropped to between one-half and one-third of the average for the industry and to between one-fifth and one-seventh of the average at enterprises which have not adopted it. The calculations show that the annual economic benefit from universal establishment of a local mechanism for prevention of breaches of contractual obligations would amount to more than 100 million rubles in the industrial sector of Ukrainian SSR alone thanks to reduction of unproductive expenditures and losses on the part of suppliers. And if we take into account that the benefit to consumers from reinforced contractual discipline will be several times greater, then the significance to the national economy of rapid adoption of a local system of delivery management is obvious.

At the same time the constructive experience that exists in the use of legal means of guaranteeing the final results of production in the industrial sector has still not spread everywhere. Many enterprises are continuing to violate contractual discipline, which means that they not only force their consumers to work feverishly, but they themselves suffer appreciable economic losses from the payment of penalties, from reduction of economic incentive funds, and so on. But a regular analysis of the causes of nondeliveries is not being made in this connection, no measures to correct them are being worked out, and the subdivisions and individuals at fault are not being held responsible. The material incentive system, the technical-and-economic planning system and the monitoring system are not aimed at fulfillment of obligations to consumers to deliver products on schedule and in the assortment specified. There are also substantial shortcomings in the organization of operational planning and the records kept on deliveries: the scope of contractual obligations to contracting parties in a particular period of time is not clearly set down; provision is not made for ongoing determination of the amounts of products delivered and sold so as to take into account fulfillment of assignments and obligations related to product deliveries and to discover the causes and persons responsible for nonfulfillment of obligations. In the final analysis all of this stands in the way of drafting and implementing specific measures to prevent breaches of business obligations, to enforce financial penalties against those responsible, and to use computer equipment to plan, record and analyze fulfillment of obligations.

Attention of ministries should be paid to management of deliveries!

Why has the experience of initiators of the movement for timely and quality fulfillment of orders still not been adopted by all collectives even though at the present time reorganization of the organization of production toward ensuring fulfillment of contractual obligations is an urgent need for all enterprises and associations in the industrial sector?

Adoption of a new procedure for assessment of enterprise performance can be achieved through the persistent and painstaking work of all management entities, industrial ministries above all.

As noted at the 10th Session of the USSR Supreme Soviet, 9th Convocation, it is ministries which, as the headquarters of the industries, should see that contractual obligations are fulfilled by subordinate associations and enterprises. It would be of substantial aid to enterprises in adopting the delivery management system to draft the relevant recommendations, rules, and regulations covering internal activity related to the creation and operation of an effective local legal mechanism for management of product deliveries or of its separate elements.

There is evidence of this, for example, in the recommendations on methods of improving legal work within the economic entity, which the Institute of Industrial Economics of the Ukrainian Academy of Sciences drafted jointly with the USSR and Ukrainian ferrous metallurgy ministries and the USSR and Ukrainian coal industry ministries. The purpose of the recommendations was to help members of the legal and other staffs of economic entities to make more effective use of legal means of correcting the causes and conditions for nonfulfillment of their own legal obligations. These recommendations were prepared on the basis of the existing legislation, which defines the competence of production associations and enterprises in the relevant fields of their business activity, methods recommendations of the USSR Ministry of Justice on forms and procedures of a legal service in the economy, and also a summarization of experience in organizing legal work in construction associations (combines) and enterprises both in these industries and also in the industries of other ministries.

For instance, the USSR and Ukrainian ferrous metallurgy ministries adopted recommendations on detailing unproductive expenditures to structural subdivisions of the enterprise and on measures to reduce them, including the Model Regulation on Detailing Unproductive Expenditures to Structural Subdivisions of the Enterprise, the Model Regulation on the Plant Commission for Unproductive Expenditures, the Standard Classifier of Causes and Responsibilities for Nonfulfillment of the Plan and of Product Delivery Contracts. Their adoption has made it possible at many enterprises to organize an effective system of accountability of subdivisions and personnel for unproductive expenditures and losses resulting from breaches of contractual obligations.

This effort has developed further in connection with the measures being taken to strengthen contract discipline in the industrial sector. Specifically, the USSR and Ukrainian coal industry ministries have adopted Recommendations on Methods of Improving Legal Work Aimed at Preventing Breaches of Contractual Obligations. They cover the content and procedure of work in production associations, enterprises and production units to use organizational and legal means to correct the internal conditions and causes of economic offenses and to draft measures to reduce amounts of forfeits (fines, penalties) paid.

In September 1978 a special order of the Ukrainian Ministry of Ferrous Metallurgy entitled "On Further Improvement of Delivery Management" granted approval of the Recommendations on Methods of Organizing the Legal Effort To Ensure Fulfillment of Obligations Concerning Product Deliveries in Production Associations and at Enterprises of the Industry. They contain an interrelated treatment of the problems of planning, recording and monitoring deliveries (drafting an approval of the delivery plan, recording and monitoring progress in its fulfillment, definition of the functions of subdivisions and individuals related to planning and recording deliveries), discovery of the causes of breaches of obligations related to product deliveries and correction of those causes. The results of adoption of the recommendations show that they help to strengthen the influence of legal work in ensuring fulfillment of assignments and obligations related to product deliveries and also improvement of current planning, monitoring and recording of their fulfillment.

But enterprises of certain industries (power machinebuilding, the timber and woodworking industry, etc.) have actually been left to themselves. Each of them has been compelled to "discover" a delivery management system for itself and to adopt it with greater or lesser success. Errors accordingly occur which might have been avoided, and resources and energy need not have been spent to seek ways of improving activity within the economic entity that were already known and had been tested.

This occurred because these and certain other ministries had not become organizers of the effort to ensure adoption of a new procedure for evaluation of enterprise performance, and at present they occupy the position of an onlooker, waiting to see what will happen. In essence they proved not to be prepared for the new procedure (though they had more than enough time since the original proposal called for it to be adopted as of 1 July 1974), and for that reason, in our opinion, they are backing off from dealing with the urgent problems that have arisen and which fall directly within their competence. The following example is typical in this regard.

The effectiveness of the new procedure for evaluation depends in large part on how reliably and up-to-date are the primary records on fulfillment of contractual obligations. The organization of primary recordkeeping has its specific features in each industry and presents certain difficulties. For instance, in a study of sales documentation at machinebuilding plants of

Donetskaya Oblast it turned out that diverse forms of records were used (journals, ledgers, cards, and so on), and they did not coincide in their content. Moreover, though in the overall they contain 63 items of information, they did not guarantee that records on product deliveries are accurate and up-to-date.

The instruction on the procedure for recording fulfillment of assignments and obligations concerning product deliveries dated 17 August 1977 provides that ministries and departments shall establish for production associations, enterprises and organizations the forms and procedure for adoption of current recordkeeping on fulfillment of contracts (accepted orders) so as to ensure the reliability of figures on fulfillment of assignments and obligations concerning deliveries of products in the amount and assortment and by the time specified.\* The USSR Ministry of Ferrous Metallurgy, by agreement with USSR Gosstab, has accordingly adopted the Temporary Instruction on Procedure for Recording Progress in Fulfillment of Assignments and Obligations Concerning Product Deliveries at Production Associations (Combines) and Enterprises; it established in the industry a uniform system for organizing recordkeeping on fulfillment of contractual obligations.

But these regulations have not been made as concrete as necessary in all industries. At enterprises in machinebuilding, for example, that is why there are difficulties in determining the costs of underdeliveries and the volume of sales so as to take into account fulfillment of delivery obligations, and so on. A need has also arisen to revise the Special Delivery Conditions for Certain Products (chemical and industrial rubber products, wire and cable, etc.). In other words, problems have arisen whose solution depends primarily on the headquarters of the industry either directly or indirectly. It is evident that the first thing that should be done in all industries is to draft model forms and to determine the most optimum recordkeeping procedures.

#### Computers and Delivery Management

When the number of consumers is large and the products list long the filling of every order can be reliably and punctually followed up only if computers are used. It is a question of setting up within the ASU of enterprises and associations a "Delivery Management" subsystem, which would perform the tasks of planning, recording, monitoring and analyzing deliveries. Adoption and operation of such a subsystem in one of the largest production associations in the construction industry--Donbassenergostroyindustrialiya--has made it possible over the past 4 years to raise the level of delivery plan fulfillment 15.2 percent. As a result projects were put on line on time, transportation costs were reduced 1.28 million rubles, and remainders of finished products in consumers' warehouses were reduced by 8 million rubles.

Extensive use of computers would be aided if ministries would prepare a standard subsystem for planning, recording and monitoring fulfillment of

\* EKONOMICHESKAYA GAZETA, No 36, 1977.

2

deliveries for ASU's, either in operation or to be set up, at their subordinate enterprises.

It is also an urgent task to develop a "Delivery Management" subsystem in industrywide computerized management systems (OASU). This will make it possible to integrate the delivery management system at the industry level. Attention should be paid to the experience of the USSR Ministry of Instrumentmaking, Automation Equipment and Control Systems, where computers prepare forecasts of fulfillment of contractual obligations that make it possible to prevent possible lapses. It is no accident that this industry has one of the highest levels of fulfillment of contractual obligations in the entire industrial sector.

So, the industry as a whole should become the principal entity in the system for preventing breaches of obligations. The need is arising to set up an OS UPP [industrywide product delivery management system]--like the OS UKP [industrywide product quality control system] which has been widely introduced in industry--which would include the following: the production association (enterprise)--the all-union (republic) industrial association--the ministry. It should be based on a set of measures aimed at eliminating the causes for breaches of contractual obligations. They would include extension of aid by the ministry to enterprises concerning methods of organizing the internal legal effort; regular followup on progress in fulfillment of contractual obligations, punctual analysis of causes and adoption of effective measures to correct them both at the level of the enterprise and also at the level of economic management entities; extensive information on the state of performance of contractual obligations; organization of effective socialist competition for punctual and quality filling of orders, etc.

When the collective bears material responsibility for every order that is not properly filled, far greater needs are felt for management entities to work efficiently and without delay. But some of them are issuing operational instructions for premature shipment, readdressing of deliveries, the issuing of orders above (or below) the production plan, they are not providing the necessary allocations of raw materials, supplies, intermediate products, components, and so on for production of products. This indicates that the actions of the leading units of the economic mechanism are not coordinated so as to achieve the final results for the national economy. In our opinion the reason is that the system of planning indicators of all-union industrial associations and ministries does not as a rule reflect the level of punctual satisfaction of the needs of the national economy for products of the necessary quality and in the necessary assortment. Probably in future the procedure for assessment of economic performance so as to take into account fulfillment of assignments and obligations related to product deliveries should extend to all-union industrial associations and industrywide ministries.

The experiment being conducted by the Ministry of Tractor and Agricultural Machinebuilding, which is aimed at maximum satisfaction of the needs of consumers for specific products of this industry, is highly interesting in this

regard. To be specific, the final results of the activity of all-union industrial associations, production associations and enterprises are evaluated in terms of such indicators as the level of satisfaction of the requirement of the national economy for the products of the industry, the relative share of products in the superior-quality category in total output, and fulfillment of the current plan of deliveries resulting from orders and contracts. These indicators are now being applied as well in the internal activity of production associations and enterprises.

Thus achieving strengthened delivery discipline in business relations is one of the important directions for further improvement of the organization and management of production both at the level of the enterprise and production association and also at the level of the industrial association and the industry as a whole. This creates conditions for the continuous functioning of the complicated system of business relations within and among industries, it is conducive to very rapid industrial application of the achievements of science and technology, and it raises the level of organization of production to a qualitatively new level, which ultimately improves the final indicators of the industry, the region and the national economy.

COPYRIGHT: Izdatel'stvo "Ekonomika," "Khozyaystvo i pravo," 1979

7045

CSO: 1820

## SYSTEMS APPROACH TO MANAGEMENT OF SCIENTIFIC-TECHNICAL PROGRESS

Moscow KHOZYAYSTVO I PRAVO in Russian No 6, Jun 79 pp 57-61

[Article by V. Ivanchenko, doctor of economic sciences and deputy division chief of USSR Gosplan]

[Text] One of the principal lines of economic policy in the present stage is still to speed up scientific-technical progress, which is a decisive condition for raising the efficiency of social production and for improving product quality.

Involvement of all participants in social production and all units of the economic mechanism in this process is taking on an ever greater role.

"The revolution in science and technology," L. I. Brezhnev noted at the 25th CPSU Congress, "requires fundamental changes in the style and methods of economic activity ... improvement, planning and economic incentives so as to create conditions which will fully promote the most rapid progress of new ideas along the entire chain--from the invention to mass production, and so as to set up a reliable economic barrier to the manufacture of obsolete products."

The systems approach to the management of scientific-technical progress from the standpoint of the entire set of problems in expanded reproduction is expected to provide an organic linkage of the achievements of the scientific-technical revolution with the advantages of the socialist economic system and to be conducive to the conduct of a unified technological policy and concentration of efforts and resources along the most important lines of scientific-technical progress [STP].

The scientific-technical revolution is indeed characterized by the fact that certain streamlets in development of science and technology become a mighty flow of scientific-technical progress, in which case a transition has to be made from management of elements, "representative" of STP, to management of systems of machines, technological processes, from management of stages in solving scientific and technical problems to management of expanded reproduction on the basis of the newest engineering and technology.

When we speak of the problems of reproduction, we usually think of development of production potential, growth of resources, and changes in the structure of production and of the proportions in the national economy. Raising the technical level of production, utilizing the achievements of STP in production, and efficiency and quality are especially taken into consideration in the broad sense of these terms and are more related to current production than to production as a whole. The present method of planning does not fully cover the effort to solve these problems. Scientific-technical progress is planned by means of the indicators in all sections of the State Plan for Economic and Social Development. But the degree to which this correct methodological principle is actually reflected in practice is today insufficient for comprehensive management of scientific-technical progress as understood in the systems approach. The scattering of the indicators pertaining to STP throughout all the sections of the plan does not give an insight into its ultimate results and efficiency.

Nor is it an accident that when the results of production and economic activity are being evaluated and economic incentive funds are being formed, the indicators of STP, which carry the force of a directive, do not have primary significance when compared to the general economic indicators of the plan.

The problem now is how to manage STP most effectively and what sort of changes should be made in the planning, management, and legal regulation of mutual relations at all levels for a comprehensive solution of the problems of technical policy consistent with the systems approach.

In our view it would be advisable to take up the question of concentrated (less scattered through the section) planning of scientific-technical progress of the necessary resources and of the efficiency of their use and the possibility of turning the section of the plan devoted to development of science and technology into a unified plan of scientific-technical progress. Of course, it should not become an alternative to the entire system of indicators of national economic plans which taken together characterize the unity of social, economic and scientific-technical goals and ultimate results of the period being planned.

The task can be limited to creating the methodological and organizational prerequisites for a more comprehensive and coordinated planned management of STP consistent with the systems approach with a view to ensuring continuity of its cycles within the limits of 5-year plans and the long-range perspective and to their organic inclusion in planned cycles of reproduction.

This approach involves an enhanced role of the USSR State Committee for Science and Technology and the USSR Academy of Sciences and preparation of comprehensive STP programs and plans, including development of the legal foundations for comprehensive management of STP.

In recent years, and during the 10th Five-Year Plan in particular, the planning of the development of science and technology has become more comprehensive. The plan for development of science and technology includes assignments for solving principal scientific-technical problems, programs for organization of production and industrial application of new products and manufacturing processes, mechanization and automation equipment, computer equipment, as well as measures to expand the sale and purchase of licenses, to improve the setting of standards, metrology and scientific management. It also defines procedure for financing scientific research projects, the training of scientists and science teachers, and certain parameters of the technical-and-economic level of production and products produced.

Nevertheless, these lines of efforts represent a small and to some extent isolated part of STP planning. From the methodological and organizational standpoints there is still a gap between basic research, programs for development of science and technology worked out at the level of the State Committee for Science and Technology, and the subsequent cycles of the plan for industrial application of the achievements of science and technology, for raising the technical level of production, and for the manufacture of new technology to fully meet the needs of the national economy.

The links in the unified chain of scientific-technical progress we have mentioned still do not have an overall technological, organizational and economic line of management. This is not in line with present-day requirements of scientific-technical progress, which is now characterized not only by basic research, development of new technology and the organization of its production, but also by the level of saturation of its production. A sizable rise in labor productivity is unthinkable if individual "representatives" of even the most efficient new engineering or technology are sporadically put into production and applied. Our national economy consists of tens of thousands of enterprises which have a differing level of engineering, technology and the equipment labor ratio. It is therefore important not only to create systems of machines, but also to saturate the national economy with them to such a degree that qualitatively new production conditions are created and the technical level of production rises substantially in the industry as a whole, in the subindustry and at every enterprise. This means that planned management must cover not only the development, debugging and adoption of prototypes of new engineering and technology, but also the way in which their production and use are organized. If a sound unified technical policy is to be conducted, there must be a coordinated and purposive solution to the problems of full mechanization and automation of production in all entities for management of the economy. The plan for development of science and technology does not at present give an exhaustive answer to such questions as what the technical level of production should be in a particular industry, what it will become in another 15-20 years, what resources are necessary to achieve that, and what their return will be.

In studying the return of scientific-technical progress to the national economy, we sometimes do not pay due attention to analysis of outlays of the

entire sum of resources allocated to these purposes. But these aspects of planning (STP) are closely related. Comprehensive management of the efficiency of scientific-technical progress from the standpoint of the national economy is impossible without assessing the resources allocated for this purpose both under the heading of the development of science and technology and also under the heading of the production of new equipment and reproduction (especially with respect to capital investments for retooling and reconstruction of production associations and enterprises).

At present the section of the plan devoted to development of science and technology is mainly oriented toward the stage of research, development, debugging and application of new techniques and technology in the form of the initial prototypes and series. That is why, in our view, there is a need for a unified plan of scientific-technical progress which organically combines the scientific-production cycle of creating new technology into an inseparable whole with the cycles of reproduction, above all the retooling and reconstruction of enterprises on the basis of the most recent engineering and technology.

At the level of the national economy we need a differentiated approach in long-range and 5-year planning. Long-range planning should be done on the basis of the detailed programs, which in turn rely on a unified comprehensive program of scientific-technical progress and a system of consolidated balances, technical-and-economic standards and general economic indicators. Many years of planning experience provides evidence that only in the long run is it possible to influence in a realistic and planned way the processes of reproduction from the standpoint of structural changes and improvement of proportions so as to take into account the consequences of STP in the broadest sense. It is in the long run that one can effectively solve the problems of equalizing levels of technical development of various industries and improvement of the production structure and proportions of the national economy. Radical changes in the configuration of the primary production unit also depend above all on changes in production methods and equipment.

In 5-year plans, which are responsible for carrying out the long-range technical policy, comprehensive programs should figure as the basis for creating a unified plan for scientific-technical development of the national economy, in which the central link could be the corresponding coordinated plans for the various sectors and industries, which would unify the processes of development of science and technology with the practical utilization of the achievements of STP as reproduction is expanded on the basis of the most recent engineering and technology.

In 5-year plans the long-range comprehensive programs for STP are comprehensively revealed in the system of indicators, programs, job orders and economic relations, in the estimate of the resources required and in the assessment of final results.

Justifying all the sections of national economic plans on the basis of an assessment of the consequences of STP means that this part of the plan has to be worked out in advance of the rest of the plan. Yet if we assume that definition and implementation of technical policy are unthinkable without a comprehensive examination of the tasks of reproduction in the planning period, all aspects of STP can be organically linked together in it only by the method of integration. In our view the purpose of advance economic analysis of scientific-technical aspects of the plan is to use the long-range data for shaping the technical, economic and social conception of the 5-year plan and for substantiating possible changes and the rate at which specific expenditures of resources are made to achieve the final goals of the plan. These data are the initial basis for preparing the detailed 5-year plan.

It is for this reason, in our opinion, that we should return to the question of adopting a "Regulation on Procedure and Dates for Compilation of the System of Plans and Their Sections."

This approach makes it possible to link together more closely the academic basic research, the long-range comprehensive STP program, the system of programs for solving basic scientific-technical problems drafted by the State Committee for Science and Technology (more than 200 programs in the 10th Five-Year Plan) with production in the broad sense, including its saturation with the new technology and systems of machines to the point of full and comprehensive mechanization and automation of industries, subindustries and production operations.

This is the essence of restructuring plans for development of science and technology so as to constitute unified comprehensive plans of the national economy's scientific-technical progress.

There are also other questions that come under the head of the legal aspect of this problem. To be specific, we have no entity responsible for compiling the comprehensive STP plan and for checking its fulfillment. STP is planned and managed by elements, stages, cycles, programs and measures. The Regulation on the State Committee for Science and Technology contains a note on its responsibility for the development of science and technology and for the technical level of production. But in actual practice this comes down to basic research and the creation of programs covering a small range of measures pertaining to development and debugging of individual prototypes of new engineering and technology. At the present time there is no STP plan that would incorporate all the stages of application of new engineering and technology and would solve the problems of raising the technical level and efficiency of production. Yet it is needed because otherwise it will not be possible to effectively and comprehensively manage the real factors in economic and social growth. In our view the State Committee for Science and Technology should devise such a plan with the help of the USSR Academy of Sciences and ministries and departments on the basis of the comprehensive 20-year STP program and initial data on resources and requirements pertaining

to the rise of efficiency of social production, which would be prepared by USSR Gosplan.

In addition, it is important to revise the regulations on planning and management entities from the standpoint of norms and standards to be used in preparation of the unified comprehensive STP plan and in organizing the entire job of its implementation. The legal basis has to be created for comprehensive management of STP at all levels of economic management: regulations on comprehensive programs, on the plan for technical development of the sector or industry, the association, or the enterprise, on the unified fund for development of science and technology, on the production development fund and on a number of other key elements in the real process of comprehensive management of STP.

Equally, complicated problems of STP need to be solved at the level of industries, associations and enterprises.

For instance, comprehensive plans for technical development of production should incorporate it in an integrated way programs and measures for development, debugging and adoption of new engineering and technology, for retooling and reconstruction of production on that basis, and for improvement of the organization, forms and methods of production management, scientific management, and personnel training. Along with social programs for development of work collectives, they will comprise plans for technical, economic and social development. This approach means that the volume of capital investments and all resources which are scheduled to be expended within the limits of the 5-year plan should be assessed, first, from the standpoint of optimum solution of the problems of raising the technical level of production, and second, from the standpoint of the growth of the productive potential in line with the overall goal-oriented tasks of the plan.

The first steps have been taken in this direction during the 10th Five-Year Plan. A certain proportion of the plan for capital investments is evaluated not only from the standpoints of the growth of productive potential, but also so as to take into account what the national economy should obtain for the resources allocated for retooling and reconstruction and for specialization of production. Only after such analysis are the questions of new construction taken up, and once again the emphasis is on concentrated commitment of resources to organizing those new production operations and building those new projects which constitute a realization of the most recent technical achievements, in the domain of the most recent technology above all.

Here we already see in outline certain connections between two sections of national economic plans--the section for development of science and technology and the section for capital investments insofar as the tasks of STP are concerned. But these relations are at present limited to the comprehensive assessments in draft plans and variants at the level of the summary divisions of USSR Gosplan.

The next step in this direction is a new approach to planning capital investments, which was discussed at the 25th CPSU Congress and the October (1976) Plenum of the CC CPSU.

The essence of this approach is to restructure the planning of capital investments to achieve a planned growth of the volume of production. In planning this growth on the basis of specific factors in the intensification of production, assignments for reduction of specific inputs of resources (including specific inputs of capital investments), along with simultaneous determination of the sum total of the saving on current and one-time outlays for the entire range of work related to raising the technical level of production and augmenting production potential, we in some degree are automatically achieving the necessary economic unity of these two decisive sections of the national economic plan and the plans of individual sectors and industries.

It seems to us that what this requires is to carry out a technical certification of existing fixed productive capital, machines, machinery, and technology with respect to their suitability for present-day requirements and also of the means of production which are in the development stage and which are planned for manufacture. This will make it possible to arrive at a future-looking comprehensive program for raising the technical level of production so as to take into account present-day requirements and the achievements of science and technology. It should be based on a planned transition to production of systems of machines, provision being made for management of the unified process of the creation, debugging, introduction and saturation of industries with new technology up to the optimum level.

It is obvious that management of the creation of a system of machines of this kind needs the relevant legal basis. We are thinking on the one hand of the need to create and normatively reinforce a method of planning which would make it possible to put emphasis on the production of systems of machines. On the other hand there is a need to solve the problem of organizing relationships between different ministries and departments participating in their creation: to regulate the questions of simultaneous and purposive development of the capacities of a number of industries, questions of component assembly, of delivery of means of production within the limits of existing programs, and so on.

Finally, it would be wise at the level of each individual enterprise to set up an ongoing form of assessment of the technical level of production and productive potential as a unified whole. In our view the enterprise passport could become such a form. The questions of what form it should take, which body should prepare it and which should approve it, can be resolved in the Standard Regulation on the Passport of the Enterprise, the Production Association and the Scientific-Production Association, which it would be wise for USSR Gosplan to prepare and approve.

One aspect of this many-sided problem that is quite important is being able to assess the benefit to the national economy of the entire sum total of measures that are part of the scientific-technical process. The national economy needs the final result of STP, which, through the system of indicators of the plan, norms, standards, prices and their dynamics, determines the growth of national income, the product produced and the national wealth.

Experience demonstrates that only a determination of summary current and one-time outlays in production and operation of new technology as compared to the technology being replaced can figure as the criterion used in such an evaluation from the standpoint of the national economy. It evidently has become high time to include among the most important planning and success indicators at all levels of planning assignments for the annual economic benefit from raising the technical level of production, from improvement of product quality, and also from improvement of management and of the scientific organization of work and production. This saving for the years of the 5-year period should be taken into account in price terms in cost-accounting indicators, norms, and standard allowances of inputs of all types of resources per unit of the final product, and also in performing the tasks of social development, natural conservation and other spheres of activity. The elements of this approach with respect to methods have already been worked out. There has in fact been practical experience in this field (Ministry of Electrical Equipment Industry, Ministry of Heavy and Transport Machinebuilding, Ministry of Power Machinebuilding, and Ministry of Tractor and Agricultural Machinebuilding).

It is important to performing the socioeconomic tasks of the plan that every enterprise and every unit of the national economy achieve a rise of labor productivity and a reduction of production cost. At the same time the orientation toward the consumer and toward improvement of the qualitative parameters of the product, involves higher production cost. Here it is indispensable to bear in mind that enterprises in the national economy figure simultaneously as both producers and consumers. Consequently, at every one of them there is a need for optimum integration of the national economic and cost-accounting results of STP.

Industrywide scientific research, technological, project planning and design organizations should have the closest relationship with production in solving both long-range and also current scientific-technical problems, which makes it imperative that the planning of STP and improvement of the structure of management be interdependent.

From this standpoint improvement of the management of STP in the industry is based on long-range plans for future concentration and specialization of production, for the shaping of large production and scientific-industrial associations, for the drafting of projects for their development and retooling in accordance with general schemes for improvement of management of the industry. In addition to scientific-industrial associations, scientific research institutes and design offices evidently need to have centers at the

industry level for management of the most important lines of STP and for coordination of the work of all other units in the industry from the standpoint of carrying out the unified scientific-technical policy.

It is obvious that this approach, when the problems of managing scientific-technical progress at the level of the national economy as a whole are solved simultaneously and in context with those of each industry and the economic mechanism is detailed down to its primary link will make it possible to really utilize, as noted at the 25th party congress all possibilities for improvement of management so that better solutions are found to technical-and-economic and social problems.

COPYRIGHT: Izdatel'stvo "Ekonomika," "Khozyaystvo i pravo," 1979

7045  
CSO: 1820

END

**END OF**

**FICHE**

**DATE FILMED**

12 SEP 79

---

WB